



---

**For Immediate Release**

**Contacts:**

Bill Schmitt  
302-327-3318  
[wschmitt@christianacare.org](mailto:wschmitt@christianacare.org)

Christine Gillan  
302-857-1689  
[cgillan1@dtcc.edu](mailto:cgillan1@dtcc.edu)

**\$1 Million NSF grant to Christiana Care’s Gene Editing Institute  
and Delaware Technical Community College ushers Delaware  
to the forefront of gene editing education and research**

Wilmington, DE, Sept 25, 2017 – The world’s most revolutionary gene editing technology is coming to college classrooms in Delaware, thanks to a \$1 million National Science Foundation (NSF) grant awarded to the [Delaware Technical Community College](#) in partnership with the [Gene Editing Institute](#) of [Christiana Care’s Helen F. Graham Cancer Center & Research Institute](#).

The NSF Advanced Technical Education (ATE) grant will support development of a gene editing curriculum for community college students. They will learn how to use leading-edge biomedical research tools that are transforming our understanding of human genetics and accelerating development of genetically based therapies for human diseases, including cancer. Only a handful of schools in the country teach gene editing techniques in the laboratory to undergraduates.

Leading the grant are Christiana Care’s Gene Editing Institute Director [Eric Kmiec, Ph.D.](#), and John McDowell, Ph.D., faculty member who teaches biology and biotechnology at Delaware Tech.

“The NSF grant demonstrates Dr. Kmiec’s commitment not only to cancer research but to educating the next generation of scientists,” said [Nicholas Petrelli, M.D., FACS](#), Bank of America endowed medical director of the Helen F. Graham Cancer Center & Research Institute at Christiana Care.

“The NSF award clearly places us at the forefront of gene editing education,” said Dr. Kmiec. “I believe we are among the first ever to transform a research tool used for years in our laboratory into a teaching tool that can be used in the undergraduate curriculum.”

According to Delaware Tech President Mark T. Brainard, “The partnership between the Gene Editing Institute and Delaware Tech is an exciting opportunity to combine the talents of the research laboratory headed by Dr. Kmiec with the teaching expertise of instructors at Delaware Tech. Through the network of schools that participate in our workshops, we will be able to disseminate emerging techniques in gene editing.”

NSF grants for ATE are awarded to community colleges to build and strengthen programs that train graduates to enter critical job markets. The gene editing grant will train research technicians in a variety of gene editing techniques, including working with human cells, for jobs in high-technology fields that drive our nation’s economy.

The idea for the project grew from the educational missions of both partnering institutions, recognizing a disparity in the rate at which biomedical research techniques, such as gene editing, are developed and used, and the time it takes for this knowledge to be introduced into a college curriculum, particularly at primarily undergraduate institutions.

An important project goal is to enable community college students in Delaware to acquire biomedical technology skills.

“We are developing a curriculum to teach mammalian tissue culture, yeast genetics, sequence analysis and bioinformatics tools, with an emphasis also on ethics, which we feel is a critical component of undergraduate education for science, technology, engineering and mathematics majors,” Dr. McDowell said.

“In Delaware, the majority of the bioscience majors continue their education at the University of Delaware before entering the workforce,” he added. “Learning mammalian tissue culture and gene editing techniques at the undergraduate level at Delaware Tech will position students who go on to study bioscience at UD to be more competitive for academic advancement and ultimately for employment upon graduation.”

“The curriculum can be expanded to accommodate any level of instruction, and that’s the beauty of it,” Dr. Kmiec explained. At one level, students may practice gene-editing using next-generation CRISPR technology, a technique elucidated and advanced in Dr. Kmiec’s lab that is used to alter and reconstitute genomic material with unprecedented precision. On an advanced level, laboratory and lecture exercises can be expanded to incorporate DNA sequencing and sequence analyses.

The award also enables partners to explore the most effective ways to teach gene editing both in the undergraduate laboratory as well as in workshops to train community college instructors in gene editing techniques and methods for delivering high impact education. The curriculum they develop could ultimately serve as a model for other institutions to follow.

“Initially, we piloted the curriculum and the experimental exercise with community college instructors from around the country, as well as some student groups,” said Dr. Kmiec. “The feedback and results have been overwhelmingly positive, and we have numerous requests already to share the developed curriculum across the country.”

## **About the Gene Editing Institute**

The Gene Editing Institute of Christiana Care Health System's Helen F. Graham Cancer Center & Research Institute is a worldwide leader in personalized genetic medicine. Founded and led by Eric Kmiec, Ph.D., the Gene Editing Institute is unlocking the genetic mechanisms that drive cancer and that can lead to new therapies and pharmaceuticals to revolutionize cancer treatment, as well as providing instruction in the design and implementation of genetic tools. Gene editing in lung cancer research has already begun so that clinical trials can be initiated. The Gene Editing Institute is integrated into the Molecular Screening Facility at The Wistar Institute in Philadelphia, PA, where its innovative gene-editing technologies are available to research projects at Wistar and to external users. Working with Wistar scientists, the Gene Editing Institute has begun research to conduct a clinical trial in melanoma. With funding from the U.S. National Institutes of Health, the Gene Editing Institute is partnering with Nemours Center for Childhood Cancer Research to develop a gene editing strategy for the treatment of sickle cell anemia and leukemia. A partnership with Bio-Rad Laboratories, Inc. advances a gene editing educational curriculum that includes a laboratory kit to teach students basic gene-editing techniques using baker's yeast.

## **About Delaware Technical Community College**

Delaware Tech – the First State's only community college – offers academic, technical, community education, and workforce development comprising more than 100 associate degree, diploma and certificate programs. The College is accredited by the Middle States Commission on Higher Education. Delaware Tech has four campuses across Delaware in Georgetown, Dover, Stanton and Wilmington. For more information about Delaware Tech, visit [www.dtcc.edu](http://www.dtcc.edu).

#####